News release

Met Office celebrates 150th anniversary with forecast improvements

21 June 2004

In the month that it celebrates its 150 year anniversary, the Met Office is reporting one of the largest improvements in its computer-produced forecasts ever seen. The full impact of its new supercomputer coming on-line is revealed in trials. Results confirm that the Met Office is set to strengthen its position as a world leader in weather forecasting and climate research.

The NEC SX-6 computers are now fully operational and the immediate six-fold increase in computing power has allowed for significant changes in the way that data is handled. Preliminary tests show these changes are producing big improvements in the quality of the forecasts and the results have exceeded the scientists' expectations.

Met Office Chief Scientist John Mitchell commented, "We were expecting good results, but the magnitude of the improvements has been a pleasant surprise. The investment in improved technology has been made at the same time as our relocation and it's great to see the benefits being realised."

Forecasters will be able to give better advice on all aspects of the weather enabling governments, business and the public to plan ahead and use the weather to their benefit.

The main changes are:

- A massive increase in the number of satellite observations going into the model
- Processing and incorporating data far more quickly than was previously possible, which greatly improves the quality of the initial analysis of the atmosphere
- Making more detailed use of information from observations about how the atmosphere has changed with time. This system is called 4-dimensional variational data assimilation (or 4DVAR).

Scientists looking at global warming will also gain from the investment as climate research uses the NECs for modelling future climatic patterns.

The power of the Met Office computing facility is set to be doubled again in 2005 as further hardware is brought on-line.

150th Anniversary media toolkit

Notes:

- 4DVAR is a complex system whereby the model adjusts its initial analysis of the atmosphere to best fit the actual observations. As well as the three-dimensional aspect, 4DVAR includes time, moving back and forth, continually nudging to a best-fit solution
- 18 June 2004 saw the switching off of the Crays, the two previous supercomputers the Met Office has used to run its models
- a full programme of events is taking place at Met Office headquarters in Exeter to celebrate the 150th anniversary on 21 June 2004
- a new Media Centre web page has been launched for journalists

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